

REMARKS

Claims 112-117 and 120-143 were pending in the application. Claims 112, 133 and 140 are independent. All of the claims have been rejected. Minor changes have been made to claim 140 to correct clerical errors. New dependent claims 144-146 have been added. These changes do not add new matter.

Rejections Under 35 U.S.C. §101

The Examiner has rejected claims 133-139, alleging that the claimed invention is directed to non-statutory subject matter. The Examiner alleges that an arrangement of data on a computer-readable medium does not constitute statutory subject matter under 35 U.S.C. §101.

There is no such rule. The Manual of Patent Examining Procedure states that data on a computer-readable medium may be statutory. The proper standard is expressed at M.P.E.P. §2106 IV.B.1, which states: “when functional descriptive material is recorded on some computer-readable medium it becomes structurally and functionally inter-related to the medium and will be statutory in most cases...”

Claims 133-139 recite subject matter falling squarely within the class of subject matter that is statutory. The claims all recite a computer-readable medium. The claims also recite an identification code, which is a functional item. The claims further recite a structural relationship between the identification code and the computer readable medium. Specifically the claims recite that the identification code is modulated on the title data at a plurality of locations using different modulation schemes. These limitations combine to define a structural and functional relationship between the data stored on the computer-readable medium and the medium itself.

The Examiner further asserts that watermarked title data is non-statutory because the watermarked data does not cause a computer to perform any function. Applicants respectfully submit that the Examiner has applied an incorrect definition of “functional.” As stated in M.P.E.P. 2106 IV.B.1(a): “a claimed computer-readable medium encoded with a data structure defines structural and functional interrelationships between the data structure and the computer software and hardware components which permits the data structure’s functionality to be realized, and is thus statutory.” This passage of the M.P.E.P. makes clear that the data does not have to *cause* a

computer to perform a function. Rather, data is functional if it is *used* by the computer hardware or software in performing a function associated with the data.

With the correct interpretation of “functional,” it is clear that the claims recite functional data. Specifically, the data recited in the claims facilitates a watermarking function. The location and manner of storage of the identification code allows a computer programmed to detect the watermark to extract the identification code but prevents unauthorized users from reading and therefore removing the identification code. The location and manner in which the identification code is encoded on the computer-readable medium is therefore important to the functioning of the watermark system and is functional.

Accordingly, the rejection under 35 U.S.C. §101 should be withdrawn.

Rejections Under 35 U.S.C. §103

The Examiner has rejected claims 112, 115-117, 122-123 and 126-143 under 35 U.S.C. §103 as being unpatentable over Moskowitz et al., (US 5,889,869, herein Moskowitz) in view of Senoh and Girod et al. Applicants respectfully disagree.

Applicants disagree with the Examiner’s interpretation of the references. The Examiner interprets Moskowitz as showing some of the limitations of the independent claims with Senoh showing other limitations of the independent claims. However, when Moskowitz and Senoh are properly interpreted, they do not show or suggest the features asserted by the Examiner. The references do not make a *prima facie* case of obviousness because they do not show, either alone or in combination, all the limitations of the claims.

The Examiner asserts that Moskowitz discloses identifying a plurality of possible placement locations in the title data based on characteristics of the title data and selecting a plurality of placement locations from the plurality of possible placement locations. The Examiner cites five passages in Moskowitz at which selection of placement locations is discussed. However, none of the cited passages describes an approach of selecting placement locations in the fashion asserted by the Examiner.

The passages cited by the Examiner fall into one of three categories: those that describe random selection of placement locations for a watermark, those that describe optimal selection of

placement locations and those that refer generally to selecting placement locations, without describing a selection method. Random selection and optimal selection are alternative approaches, neither of which is the same as identifying a plurality of possible placement locations based on characteristics of the title data and then selecting placement locations from the possible placement locations. The passages that merely refer to selecting placement locations do not teach or suggest any approach and cannot be read as teaching or suggesting a specific approach recited in the claims.

More specifically, the passage at column 5, line 59-column 6, line 8, describes “optimal planning of digital watermark insertion” (column 5, lines 66-67). The passage at column 7, lines 29-39 describes random or pseudo-random selection of watermark locations based on a pseudo-random key. Column 10, lines 11-14 refers to “advantageous locations for the insertion of digital watermarks,” but does not describe how such advantageous locations are selected. Column 11, lines 22-26 describes selecting the “most secure locations for placement of watermarks.” This passage is an example of optimal selection using security as the criterion to be optimized. Column 12, lines 19-25 also describes “optimal locations for watermarks.”

Because Moskowitz does not teach the proposition asserted by the Examiner, the references, even if combined, would not teach or suggest the claimed invention. Specifically, the references whether alone or in combination, would not teach or suggest “identifying a plurality of possible placement locations in the title data based on characteristics of the title data” and “selecting a plurality of placement locations from the plurality of possible placement locations,” as recited in claim 112. The references also do not teach or suggest a computer readable medium meeting the limitation of claim 133 that recites: “each of the plurality of locations being a random location within a group of available placement locations at which the watermarked title data has properties meeting at least one criterion.” Nor do the references teach or suggest “identifying a plurality of locations in the title data based on properties of the title data” and “randomly selecting a subset of placement locations from the plurality of identified locations,” as recited in claim 140. Because the references do not teach all limitations of any claim, the rejection under 35 U.S.C. §103 should be withdrawn.

As a further reason for withdrawal of the rejection, Senoh also does not teach the features asserted by Examiner. The Examiner asserts that Senoh teaches randomly selecting a plurality of

number to frequency modulation relationships at column 22, lines 28-44. Contrary to the Examiner's assertion, that passage of Senoh describes a three-step process in which data to be watermarked first undergoes a frequency transform step to form an intermediate signal (see column 2, line 31). The watermark data is inserted into the intermediate signal – not the original signal. A frequency inverse transform step is then applied to the intermediate signal. Though the passage describes using a random number to select a set of frequency components in the intermediate signal into which the watermark data is inserted, inserting data into a frequency component of the intermediate signal is not the same as modulating a placement location in the original signal.

Accordingly, Senoh does not teach frequency modulation at all. It necessarily follows that Senoh does not teach frequency modulation using a randomly selected frequency modulation relationship. Thus, contrary to the Examiner's assertion, even if combined, Moskowitz and Senoh do not teach the random selection of a plurality of number to frequency modulation relationships at a plurality of placement locations selected.

Therefore, the combination of Moskowitz and Senoh does not teach or suggest limitations of the claims, including “randomly selecting a plurality of number-to-frequency modulation relationships” and “frequency modulating at least a portion of the title data at each of the plurality of selected placement locations...using one of the selected plurality of number-to-frequency modulation relationships,” as recited in claim 112. The references also do not teach or suggest computer readable medium with “a random relationship between the identification code and modulation at each of the plurality of locations,” as recited in claim 133. The references, even if combined, also do not show “for each placement location in the subset: (i) randomly selecting one of a plurality of number to frequency modulation relationships; (ii) modulating the title data at the placement location...based on the selected number to frequency modulation relationship,” as recited in claim 140. Because the references, even if combined, do not show all the limitations of the claims, the rejection should be withdrawn.

Further, there is no motivation to combine the references. The Examiner asserts that motivation would be found in the desire to make it difficult to detect the watermark data. However, when the references are properly interpreted, there is no teaching or suggestion that would have lead one of skill in the art to recognize that the combination of references proposed by the Examiner

CONCLUSION

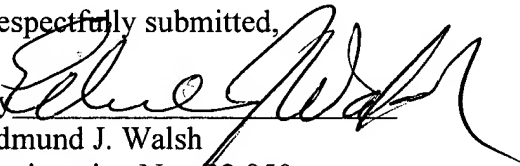
A Notice of Allowance is respectfully requested. The Examiner is requested to call the undersigned at the telephone number listed below if this communication does not place the case in condition for allowance.

If this response is not considered timely filed and if a request for an extension of time is otherwise absent, Applicant hereby requests any necessary extension of time. If there is a fee occasioned by this response, including an extension fee, that is not covered by an enclosed check, please charge any deficiency to Deposit Account No. 23/2825.

In view of the above amendment, applicant believes the pending application is in condition for allowance.

Dated:

Respectfully submitted,



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